



**INFORMATION CITED BY APPLICANTS THAT MAY BE MATERIAL  
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Applicants: A.G. Filler et al. Attorney Docket No: UOFW16938

Serial No: 08/028,795 Group Art Unit:

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Title: IMAGE NEUROGRAPHY AND DIFFUSION ANISOTROPY IMAGING

**U.S. PATENT DOCUMENTS**

1. GENERAL PURPOSE MR SEQUENCES

*Examiner Initial	ID	Document No.	Date	Name	Class	Sub-Class
<u>REC</u>	U1	4,868,501	09/19/1989	Conolly	324	309
	U2	4,843,322	06/27/1989	Glover	324	309
<u>✓</u>	U3	4,901,020	02/13/1990	Ladebeck et al.	324	309

2. MR IMAGING OF FLUID FLOW

*Examiner Initial	ID	Document No.	Date	Name	Class	Sub-Class
<u>REC</u>	U4	4,714,081	12/22/1987	Dumoulin et al.	128	653
	U5	4,528,985	07/16/1985	Macovski	128	653
	U6	4,836,209	06/06/1989	Nishimura	128	653
	U7	4,516,582	05/14/1985	Redington	128	653
	U8	4,647,857	03/03/1987	Taber	324	309
<u>✓</u>	U9	4,777,957	10/18/1988	Wehrli et al.	128	653

**FOREIGN PATENT DOCUMENTS**

1. IMMOBILIZING SPLINTS

*Examiner Initial	ID	Document No.	Publication Date	Country	Class	Sub-Class	Translation Yes	Translation No
<u>REC</u>	F1	JP3133423	06/06/91	Japan	—	—	—	—

2. FAT SUPPRESSION

*Examiner Initial	ID	Document No.	Publication Date	Country	Class	Sub-Class	Translation Yes	Translation No
<u>RSC</u>	F2	JP2077239	03/16/90	Japan	—	—	—	—

3. MR GUIDED SURGICAL SYSTEMS

*Examiner Initial	ID	Document No.	Publication Date	Country	Class	Sub-Class	Translation Yes	Translation No
<u>RSC</u>	F3	WO 90/05494	05/31/90	PCT	—	—	—	—

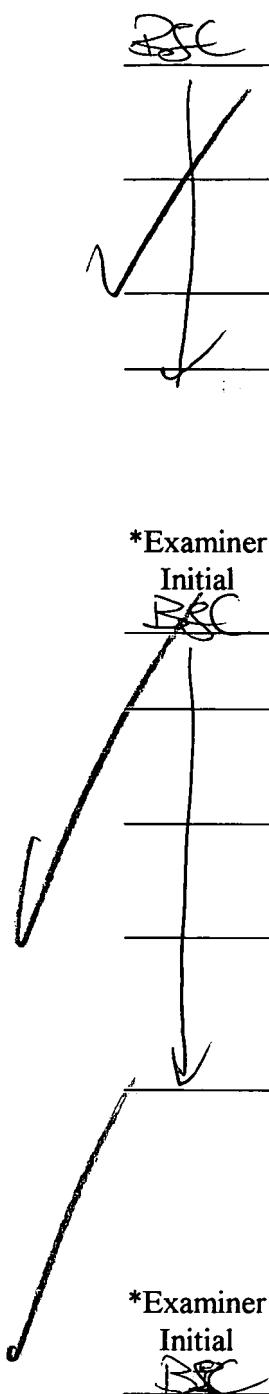
OTHER INFORMATION  
(Including Author, Title, Date, Pertinent Pages, Etc.)

1. DIFFUSION WEIGHTED MR IMAGING

(a) Neural structures

(i) Imaging Diffusion

*Examiner Initial	ID	Document Information
<u>RSC</u>	O1	M. Doran et al., "Normal and Abnormal White Matter Tracts Shown By MR Imaging Using Directional Diffusion Weighted Sequences," <i>Journal Of Computer Assisted Tomography</i> 14(6): 865-873 (November/December 1990).
—	O2	M. Doran et al., "Magnetic Resonance: Perfusion and Diffusion Imaging," <i>Neuroradiology</i> 32:392-398 (1990).
—	O3	M.E. Moseley et al., "Diffusion-weighted MR Imaging of Anisotropic Water Diffusion in CAT Central Nervous System," <i>Radiology</i> , 176:439-445 (August 1990).
—	O4	J.V. Hajnal et al., "MR Imaging of Anisotropically Restricted Diffusion of Water in the Nervous System: Technical, Anatomic, and Pathologic Considerations," <i>Journal Of Computer Assisted Tomography</i> , 15:1-18 (January 1991).
—	O5	M.E. Moseley et al., "Diffusion-Weighted MR Imaging of Acute Stroke: Correlation with T2-Weighted and Magnetic Susceptibility-Enhanced MR Imaging in Cats," <i>ANJR</i> 11:423-429 (May/June 1990).



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O6 D. Chien et al., "MR Diffusion Imaging of the Human Brain," *Journal Of Computer Assisted Tomography*, 14(4):514-520 (July/August 1990).

O7 G.M. Bydder et al., "MR Imaging of Anisotropically Restricted Diffusion of Water in Tumors of the Central Nervous System", *Book of Abstracts, Society of Magnetic Resonance in Medicine* (1991).

O8 J.S. Schoeniger et al., "NMR Microscopy of Single Neurons" *Book of Abstracts, Society of Magnetic Resonance in Medicine* (1991).

O9 Douek et al., "Myelin Fiber Orientation Color Mapping," *Book of Abstracts, Society of Magnetic Resonance in Medicine*, 919 (1991).

(ii) Diffusion Measurement

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O10 M.E. Moseley et al., "Anisotropy in Diffusion-Weighted MRI," *Magnetic Resonance In Medicine*, 19:321 (1991).

O11 J.R. MacFall et al., "Pre- and Postmorten Diffusion Coefficients in Rat Neural and Muscle Tissues," *Magnetic Resonance In Medicine* 20:89-99 (1991).

O12 M.E. Moseley et al., "Ultrafast Magnetic Resonance Imaging: Diffusion and Perfusion," *Canadian Association Of Radiologists*, 42(1):31-38 (February 1991).

O13 D. LeBihan et al., "Measuring Random Microscopic Motion of Water in Tissues with MR Imaging: A Cat Brain Study," *Journal Of Computer Assisted Tomography*, 15(1):19-25 (January/February 1991).

O14 Chenevert et al., "Quantitative Diffusion Anisotropy in Rat Gliomas," *Book of Abstracts, Society of Magnetic Resonance in Medicine*, 787 (1991).

(iii) Analysis of Structure and Function of Diffusion

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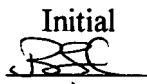
O15 D. LeBihan, "Diffusion/Perfusion MR Imaging of the Brain: From Structure to Function," *Radiology*, 177:328-329 (1990).

(b) Non-Neural Structures

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ID	Document Information
O16	M.E. Moseley et al., "Acute Effects of Exercise on Echo-Planar T <sub>2</sub> and Diffusion-Weighted MRI of Skeletal Muscle in Volunteers," <i>Book of Abstracts, Society of Magnetic Resonance in Medicine</i> , 108 (1991).
O17	Neeman et al., "A Simple Method for Obtaining Cross-Term-Free Images for Diffusion Anisotropy Studies in NMR Microimaging," <i>Book of Abstracts, Society of Magnetic Resonance in Medicine</i> (1991).

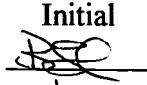
2. FAT SUPPRESSION

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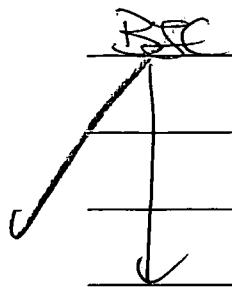
ID	Document Information
O18	J. Guy et al., "Fat Suppression MRI; Gd-DTPA Enhancement in Experimental Optic Neuritis," <i>Book of Abstracts, Society of Magnetic Resonance in Medicine</i> , 913 (1991).
O19	G. Sze, "Recent Advances in Spinal Magnetic Resonance Imaging," <i>Canadian Association of Radiologists Journal</i> , 42(3):190-198 (June 1991).
O20	Haase et al., "NMR Chemical Shift Selective Imaging", 30 <i>Phys. Med. Biol.</i> 341-344 (1985)
O21	Dixon et al., "Simple Proton Spectroscopic Imaging", 153 <i>Radiology</i> 189-194 (1984)
O22	Shuman et al., "Improved Fat Suppression in STIR MR Imaging: Selecting Inversion Time Through Spectral Display", 178 <i>Radiology</i> 885-889 (1991)

3. SPIN ECHO IMAGING OF NEURAL STRUCTURES

(a) T<sub>1</sub>, T<sub>2</sub> Weighted Sequences for Imaging Peripheral Nerves

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ID	Document Information
O23	D.N. Blair et al., "Normal Brachial Plexus: MR Imaging," <i>Radiology</i> , 165:763-767 (1987).
O24	L.M. Fahr et al., "Imaging of Peripheral Nerve Lesions," <i>Orthopedic Clinics Of North America</i> , 19(1):27-41 (January 1988).
O25	B. Roger et al., "Imaging of Posttraumatic Brachial Plexus Injury," <i>Clinical Orthopaedics And Related Research</i> , 237:57-61 (December 1988).



O26 R.R. Tash, M.D., et al., "Trigeminal Neuralgia: MR Imaging Features," *Radiology* 172:767-770 (1989).

O27 M. Mesgarzadeh et al., "Carpal Tunnel: MR Imaging, Part II. Carpal Tunnel Syndrome," *Radiology*, 171:749-754 (1989).

O28 M. Mesgarzadeh et al., "Carpal Tunnel: MR Imaging," *Radiology* 171:743-748 (1989).

O29 D.S. Titelbaum et al., "Wallerian Degeneration and Inflammation in Rat Peripheral Nerve Detected by in Vivo MR Imaging," *ANJR* 10:741-746 (July/August 1989).

(b) T<sub>2</sub> Weighted Imaging of Brain

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O30 M.J. Kuhn et al., "Wallerian Degeneration After Cerebral Infarction: Evaluation with Sequential MR Imaging," *Radiology* 172:179-182 (1989).

(c) Spin Echo Imaging of Spinal Nerves

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O31 J.K. Kostelic et al., "Lumbar Spinal nerves in the Neural Foramen: MR Appearance," *Radiology* 178:837-839 (1991).

(d) Spin Echo and STIR Sequence Imaging of Optic Nerve

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O32 Atlas et al., "STIR MR Imaging of the Orbit," *151 Am. J. Roentgen* 151:1025-1030 (1988).

4. THREE DIMENSIONAL MR IMAGE GENERATION

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O33 Saloner et al., "Application of a Connected-Voxel Algorithm to MR Angiographic Data, 1 *Journal of Magnetic Resonance Imaging* 423-430 (1991)

5. CONTRAST AGENT IMAGING OF NEURAL STRUCTURES

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O34 B. Penev et al., "Neurography Using the Intramuscular Injection of Ionic Iodine Contrast Media," *Neuroradiology* 32:316-318 (1990).

RSC O35 M. Takeshita et al., "Neurography of the Brachial Plexus in the Thoracic Outlet Syndrome," *International Orthopaedics (SICOT)* 15:1-5 (1991).

6. PHASED-ARRAY COIL SYSTEM

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O36 P.B. Roemer et al., "The NMR Phased Array," *Magnetic Resonance In Medicine* 16:192-225 (1990).

RSC O37 C.E. Hayes et al., "Volume Imaging with MR Phased Arrays," *Magnetic Resonance In Medicine* 18:309-319 (1991).

7. IMMOBILIZING SPLINTS

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O38 F.G. Shellock et al., "Kinematic Magnetic Resonance Imaging of the Joints: Techniques and Clinical Applications," *Magnetic Resonance Quarterly*, 7(2):104-135 (1991).

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Brian L. Cash 6-17-94

Date Considered

\*Examiner: Initial if reference considered, whether or not citation is in conformance with M.P.E.P. § 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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